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During the past couple of decades interest rates on agricultural loans in low income countries have been routinely maintained low and inflexible. In most cases, these rates have been lower than regular commercial rates, and often lower than increases in overall prices. As a result, negative real rates of interest have been charged on many of these loans, especially during the past 5 years. Various arguments are used to justify these policies. One of the most commonly used is that the demand for agricultural loans, especially among small farmers, is very sensitive to changes in the contractual rate of interest. It is assumed that higher rates would discourage loan demand, retard investments in productive enterprises, and also slow the adoption of new technology. It is further assumed that low interest rates on loans are an efficient way of providing economic assistance to rural poor, and that these low rates help eliminate moneylenders who are charging exploitative rates on their loans.

Despite the fact that billions of dollars worth of loans have been, and are being made under these policies, there has been very little evidence presented to substantiate these critical assumptions. In part, this is due to methodological problems associated with loan demand analysis. After a brief discussion of some of these problems, we go on to argue that many farmers in low income countries may be relatively insensitive to changes in the contractual rate of interest on their loans. Farm level data from several countries are presented to support this view.

Methodological Problems

Analysis of agricultural loan demand has been hampered by at least two major problems: (1) actual estimation of a demand function for credit, and (2) determining the "price of credit" to use in the demand analysis. The first problem is one of specifying and measuring the determinants of loan demand with the limited data which are typically available. In many cases, rural borrowing is for a mixture of farm-firm as well as household uses. Further, the borrower realizes little direct satisfaction from a loan. The loan simply adds to the liquidity pool from which the household draws for its consumption, production and investment activities. The utility of the loan is derived from these various uses of additional liquidity. Adequate data are usually not available to allow comprehensive analysis of how all of these activities affect loan demand. As a result, it is difficult to separate movement along a demand schedule due to changes in the price of the loan, from changes in the amount borrowed caused by shifts in the demand schedule.

Because of the lack of data on the various economic activities of the firm-household, researchers have been forced to estimate partial loan demand schedules. This is done by calculating marginal efficiency of investment schedules for various farm activities. The aggregation of these schedules is assumed to approximate the loan demand schedule where contractual interest rates and marginal returns to productive investments are equated. This approach ignores the internal financing capability of the firm-household and makes several critical assumptions: farm investments encompass most of the things which the household can do with additional liquidity, and borrowers perceive the contractual rate of interest on loans to be the "price of credit." As will be shown later, these assumptions rest on shaky foundations.

The second methodological problem is to determine the "price of credit" which should be used in analysis of loan demand. In most low income countries, contractual interest rates on formal loans are administered and change very little over time or among different groups of borrowers. This lack of variation makes it difficult to apply statistical tools to the study of loan demand. Moreover, it is not clear if the contractual interest rate is the correct "price" to use in this type of analysis. At least two other measures might be used as the variable on which borrowing decisions are based. One is the real rate of interest. This is the contractual rate of interest adjusted by changes in some price index. If prices in general decrease over the term of the loan, the real rate of interest is higher than the contractual rate. This was the case in the United States during the mid-1930's. If prices in general increase, the real rate is lower than the contractual rate, and the real rate of interest is negative. Only when general prices do not change over the loan period are contractual rates of interest equal to real rates of interest.

Another measure of "credit price" which might be used is the effective costs of borrowing a unit of money for a specific period. This measure includes the interest charges, service fees on the loan, and all other costs incurred in transacting the loan. As will be noted later, these transaction costs may be very substantial. Only when non-interest costs of borrowing are nil, and price indexes do not change over the period of the loan, are all three measures of "credit price" equal.

Which "price", or combination of "prices", to use in loan demand analysis is an empirical question. In the following discussion we will show that there may be substantial differences among these three prices in specific situations. We will conclude by arguing that contractual rates of interest may have a relatively weak effect on loan demand, especially among small farmers.

Inflation and Real Rates of Interest

Inflationary pressures have been particularly strong in recent years, especially in most low income countries (LIC's). As can be noted in Table 1, the average change in worldwide consumer prices have ranged from six to fifteen percent annually over the 1971 to 1975 period. Over the same period, consumer prices accelerated from 10 percent per year to near 30 percent per year in low income countries. Inflation has been particularly intense in LIC's in the Western Hemisphere where annual price changes shot up from 16 percent in 1971 to 53 percent in 1975.

In a handful of countries, such as Saudi Arabia, agricultural loans are granted interest free. In several other countries, including Chile, the principal of some agricultural loans may be indexed to changes in overall prices. In most LIC's, however, the contractual interest rates on agricultural loans are quite inflexible and range between six and eighteen percent per year [World Bank, p. 79].

It is surprisingly difficult to determine the average contractual interest rate charged on formal agricultural credit. This is due to the variety of rates levied on various loans. Recently in Brazil, for example, interest rates ranged from 0 to 15 percent annually on various types of agricultural loans. Other practices such as discounting interest payments in advance, compensatory balances, and other management and supervisory service fees further complicate the analysis of contractual interest rates. Despite these measurement problems, there is little doubt that average contractual rates of interest on formal agricultural loans in most LIC's have been lower than the rate of inflation the past few years. As a result, some borrowers have been receiving income transfers through "paying" negative real rates of interest on loans.

TABLE 1: Weighted Annual Rates of Change in Consumer Prices in the World and Among Various Groups of Countries 1971-1975*

	1971	1972	1973	1974	1975
World	6.0	5.8	9.5	15.1	13.4
Industrial Countries	5.1	4.5	7.5	12.6	10.7
Less Developed Countries	9.6	12.2	20.3	29.4	27.6
Western Hemisphere	16.2	22.1	31.4	38.4	53.0
Middle East	6.2	6.0	11.7	20.2	19.4
Asia	5.6	7.5	16.5	29.8	10.0
Africa	6.4	5.4	9.3	19.2	17.3
Selected Countries					
Bangladesh	6.3**	5.2**	45.3	54.4	24.4
Brazil	20.2	16.7	12.6	27.5	29.0
Colombia	9.1	14.3	22.8	24.5	26.1
Korea	12.1	11.8	3.1	23.6	26.2
Taiwan	2.9	3.0	8.2	48.1	5.6

Source: International Financial Statistics, Vol. 29, No's. 1 and 6, January and June 1976, pp. 34 and 36.

* Weighted by gross domestic product figures

** Changes in consumer price indexes for Pakistan.

Unexpected surges in inflation, such as occurred in Taiwan in 1974 (Table 1) probably have little effect on borrowing decisions.[1/] Persistent, almost cronic inflation, such as has existed in Brazil for the last several decades undoubtedly does affect borrowing decisions. When borrowers expect negative real rates of interest on their loans, anomalous investment behavior occurs. A large landowner in Chile, for example, with ample access to negatively priced credit may find it profitable to buy additional tractors, even though he underutilizes the tractors he already owns. With rapid inflation, his tractors increase in nominal value faster than the total costs of depreciation and interest charges on his loan. As a result, he receives an implied income transfer through the loan transaction.

An example of how this income transfer might take place is shown in Table 2. Assume that a loan for $100 is made for 12 months at 12 percent per year, and that the expected and realized rate of inflation is 36 percent. Also assume that the borrower incurs no loan transaction costs beyond the interest charges, and that the borrower invests the loan in some nonperishable inventory which increases in nominal value at the same rate as inflation. At the end of the loan period the borrower repays the $100 principal plus $12 in interest. The purchasing power of the $112 expressed in the prices which existed at the time the loan was granted, however, is only $82. The purchasing power of $18 was not returned to the lender despite the $12 interest payment. If the borrower sold his inventory for $136, and only had to repay $112 for the loan, he is left with a $24 profit from the loan transaction. In prices current at the start of the loan cycle, the borrower received the $18 of purchasing power not returned to the lender.

The opportunity to enjoy these income transfers can have a very strong impact on the decision to borrow. This is especially the case for those borrowers

TABLE 2: Income Transfer Example

Assumptions		
Loan value t_1	$100	
Annual contractual interest rate	12%	
Term of loan t_1 to t_2	12 months	
Expected and actual rate of inflation t_1 to t_2	36%	
CPI t_1 = 100		
CPI t_2 = 136		
Additional transaction costs for borrower	nil	
Borrower invests loan in additional non-perishable inventory which increases in nominal value at same rate as CPI changes		
Income Transfer		
Loan repayment in t_2	$100	
Interest payment in t_2	$ 12	
Total	$112	$82
Purchasing power in t_1 prices		$82
Value of additional inventory t_2	$136	
Less loan and interest paid	$112	
Net income transfer	$ 24	$18
Purchasing power in t_1 prices		$18

who incur relatively few loan transaction costs beyond the interest charges. Many small borrowers, and farmers borrowing for the first time, however, may encounter substantial borrowing costs.

Borrowing Costs

Borrowers may incur four types of costs in negotiating, obtaining, and repaying a loan. These are: (1) interest payments made to the lender, (2) additional transaction charges collected by the lender beyond the interest payments, (3) loan transaction costs paid by the borrower to someone other than the lender, and (4) the borrower's time and other costs which result from the loan transaction. A few examples of each of the non-interest costs may clarify their nature and importance.

In many countries, lenders are allowed to charge service fees, closing costs, or bill the borrower for loan paperwork. In some cases a payment for interest may be deducted in advance, or the borrower may be forced to maintain a compensatory balance with the lender, or the borrower may be forced to buy other lender services in order to get a loan. These techniques are thinly disguised ways of avoiding usury regulations and of increasing the price paid for the loan. Informal lenders may accomplish the same results by tying the sale of inputs or products to the granting of a loan. They may also require various personal services from the borrower as part of the loan obligation. In some cases, these additional transaction costs paid to the lender can be a substantial part of the costs of borrowing.

Formal lenders in a number of low income countries require prospective borrowers to do paperwork outside the lending agency. This may include application charges, certification of various forms, and proof of land ownership. In some cases, the lender may require a new borrower to pay for an independent audit of his assets. Bribes are required, in some cases, before the applicant can receive favorable consideration of his loan application.

Some borrowers find that the time and other costs of getting a loan may make up a large part of their total costs of borrowing. Because the credit needs of farmers are quite seasonal, borrowers are usually lined up outside the offices of formal lenders several weeks before planting begins. In some cases farmers may spend one or two days waiting in line to negotiate a loan. In addition, loan offices typically are located at some distance from the residence of borrowers. It may take the potential borrower a full day or more to go to town each time he makes contact with the formal lender. The borrower may be forced to repeat this trip a number of times as he applies for the loan, returns to see about final approval, returns to receive several disbursements under the loan, and again returns to make repayment.

Farm Level Data

There are surprisingly few farm level studies which document borrower costs of acquiring formal loans. We have been able to find only three such studies: one in Brazil, one in Bangladesh and one in Colombia. Despite the limited coverage of these studies, they give some valuable insights into the nature and make up of some borrowers' costs.

Bangladesh Case

In the mid-1960's, Shahjahan and associates studied credit use among more than 2,500 farmers in what is now Bangladesh. Part of this study reported on borrower costs incurred in getting loans from the Agricultural Development Bank of Pakistan. During the period of the study, the Agricultural Development Bank charged a uniform seven percent contractual rate of interest on all loans.

Borrower costs as determined by the study, are summarized in Table 3. In this study, all non-interest costs of transacting the loan are lumped together. As can be noted, the loan transaction costs and interest charges are arranged in the table by loan-size groups. Unfortunately, the study did not report on the average length of term of the loans. Most of the loans, however, were for

one cropping period. In the table we calculate the effective annualized costs of borrowing on assumed six and 12-month loan periods. The average loan probably falls somewhere between these two time periods. Since non-interest, loan transaction costs are more or less fixed for a given loan, the effective annualized costs of borrowing for that loan will decrease as the time period over which the loan is made lengthens.

As can be noted in Columns five and six of Table 3, interest payments made up less than half the total borrowing costs in most loan size groups for loans of both six and 12 months duration. For the smallest loan, interest payments made up only nine percent of total borrowing costs on a six-month loan and only 17 percent on a 12-month loan. In the largest loan-size group, interest payments made up 40 percent of the borrowing costs of a six-month loan and 57 percent for a 12-month loan. If the interest rate charged on all loans was doubled from seven to 14 percent, borrowers of 50 rupees would only experience an increase of nine percent on their six-month loans and 17 percent on their 12-month loans. At the same time, borrowers in the largest loan-size group would see their costs of borrowing increase by 40 and 57 percent respectively.

The effective annualized costs of borrowing, as a percent of the total amount borrowed, are presented in Columns seven and eight of Table 1. As can be noted, the rates drop sharply as the size of loan increases. A borrower of 50 rupees (roughly $10 U.S.) incurs effective annualized borrowing costs equal to 74 percent of a six-month formal loan and 40 percent on a 12-month formal loan. For the same periods, borrowers of formal loans worth 1,300 rupees (roughly $270 U.S.) faced effective rates of only 18 and 12 percent respectively.

Brazilian Case

Nehman analyzed borrowing costs in 1971 among a sample of 150 farmers in the State of Sao Paulo, Brazil. Small farmers made up about half the sample.

TABLE 3: Farmer Costs of Borrowing in Bangladesh from the Agricultural Development Bank of Pakistan in 1963 by Loan-Size Groups

1	2	3	4	5	6	7	8
Average Size of Loan	Non-Interest Costs of Loan[1]	Interest Payment if Loan Held for 6 Months[2]	Interest Payment if Loan Held for 12 Months[2]	Interest Payments as a Percent of Total Costs of Borrowing		Effective Annualized Costs of Borrowing as Percent of Loan	
				for 6 Months	for 12 Months	for 6 Months[3]	for 12 Months[4]
	In 1963 Rupees[5]			%	%	%	%
50	16.73	1.75	3.50	9	17	74	40
150	25.54	5.25	10.50	17	29	41	24
250	30.70	8.75	17.50	22	36	32	19
350	38.18	12.25	24.50	24	39	29	18
450	43.59	15.75	31.50	27	42	26	17
550	70.62	19.25	38.50	21	35	33	20
650	56.20	22.75	45.50	29	45	24	16
800	67.10	28.00	56.00	29	45	24	15
1000	67.51	35.00	70.00	34	51	21	14
1300	68.58	45.50	91.00	40	57	18	12

Source: Adapted from Shahjahan, p. 77.

1/ Includes application fees, form filling and registration fees, costs for travel and entertainment related to acquiring the loan, and value of borrower time spent in negotiating the loan.

2/ In 1963 the Agricultural Development Bank of Pakistan charged 7 percent annually on agricultural loans.

3/ Columns two plus three divided by column one and multiplied by a factor of two to convert to annual rate.

4/ Columns two plus four divided by column one.

5/ In 1963 the exchange rate of rupees for one U.S. dollar was 4.792.

Approximately 30 percent of the farmers interviewed had formal loans. The average contractual rate of interest on these formal loans, including a standard service charge, was about 13 percent. Table 4 summarizes the borrowing costs of those receiving formal credit in the sample. The information in the table is presented by borrower's farm size. As can be noted, borrowers in the smallest farm-size group acquired an average of 680 cruzeiros ($136 U.S.) from formal sources. Borrowers in the largest farm size category averaged 6,871 cruzeiros ($1,374 U.S.) in formal loans. The average interest costs of holding the loan six and 12 months and the additional transaction costs of acquiring the loan are also shown in the table.

As in the Bangladesh case, interest charges make up less than half of the total borrowing costs of obtaining small loans. For a six-month loan in the 0 to 20 hectare group interest charges were 29 percent of total borrowing costs and 45 percent for a 12-month loan. The largest borrowers incurred 76 percent of their borrowing costs in interest charges for six-month loans and 86 percent on 12-month loans.

The information in Table 4 also shows that the annualized costs of borrowing drop sharply as the amount of formal borrowings increase. Borrowers of the smallest amounts incurred total borrowing costs equal to 44 percent of the value of their six-month loans and 29 percent of their 12-month loans. The largest borrowers had percentages of only 18 and 15 percent respectively. As Nehman reports, it is little wonder that borrowers of small amounts in the sample made substantial use of informal credit sources. These informal sources charged higher contractual rates of interest. Their other loan transaction costs, however, were generally found to be much lower than that of formal lenders. It appeared that the annualized costs of borrowing small amounts from formal and informal sources were quite similar, as a result.

TABLE 4: Farmer Costs of Borrowing from Formal Sources
in State of Sao Paulo, Brazil in 1971 by Farm Size Groups

1	2	3	4	5	6	7	8	9
Farm Size in Hectares[1]	Average Formal Loan Size	Non-Interest Costs of Getting Loan	Interest Payment if Loan Held for[3]		Interest Charges as Percent of Total Costs of Borrowing		Annualized Costs of Borrowing as Percent of Loan Value	
			6 Months	12 Months	6 Months[4]	12 Months[5]	6 Months[6]	12 Months[7]
		-In 1971 Cruzeiros[2]-			----------Percent----------			
0-20	680.00	109.00	44.20	88.40	29	45	44	29
21-50	3665.00	178.00	238.23	476.45	57	73	22	18
Over 50	6871.00	144.00	446.62	893.23	76	86	18	15

Source: Adaptation of Nehman, p. 78.

1/ One hectare equals 2.47 acres.

2/ In 1971 one cruzeiro equaled .20 dollar U.S.

3/ Assumes an average interest rate of 13 percent per year.

4/ Column 4 divided by column 3 plus 4.

5/ Column 5 divided by 3 plus 5.

6/ Columns 3 plus 4 divided by column 2 and multiplied by 2 to convert to annual rate.

7/ Columns 3 plus 5 divided by column 2.

Colombian Case

In 1973-74, Villamil studied credit use among 63 farmers in the central part of Colombia. All of the farmers in his sample operated less than 20 hectares of land, and most had less than 10 hectares. The area studied is somewhat typical of many low income farming areas clinging to the sides of mountains in Colombia. The study reports on credit use and costs of acquiring credit for 1972 and 1973.

Approximately 30 percent of the loans held by this group of farmers came from formal sources; this was about 45 percent of the total amount borrowed by the group. The contractual interest rate plus service fees charged on these formal loans averaged about 13 percent per year. Most of the farmers in the sample borrowed from both formal and informal sources. Farmers, nevertheless, were getting much less formal credit than they requested. Their extensive use of informal credit can also be partially explained by the costs of borrowing from formal sources. Villamil found that contractual interest charges and service fees on formal loans only averaged 30 percent of the costs of borrowing. On an annualized basis, borrowers were incurring 42 percent of the total value of their formal loans in borrowing costs. This was only moderately lower than the average 47 percent which borrowers expended in acquiring all types of loans, formal and informal. As in the Bangladesh and Brazilian cases, small borrowers experienced higher annualized borrowing costs for their formal loans than did larger borrowers.

Costs for New Borrowers

New clients of formal lenders can expect to incur more loan transaction costs than individuals who have previously borrowed from the same lender. This includes waiting costs while the lender takes time to assemble more information on the new client, more paperwork to be completed by new borrowers, and the possibility that new applicants may be forced to visit the lender more times to negotiate the

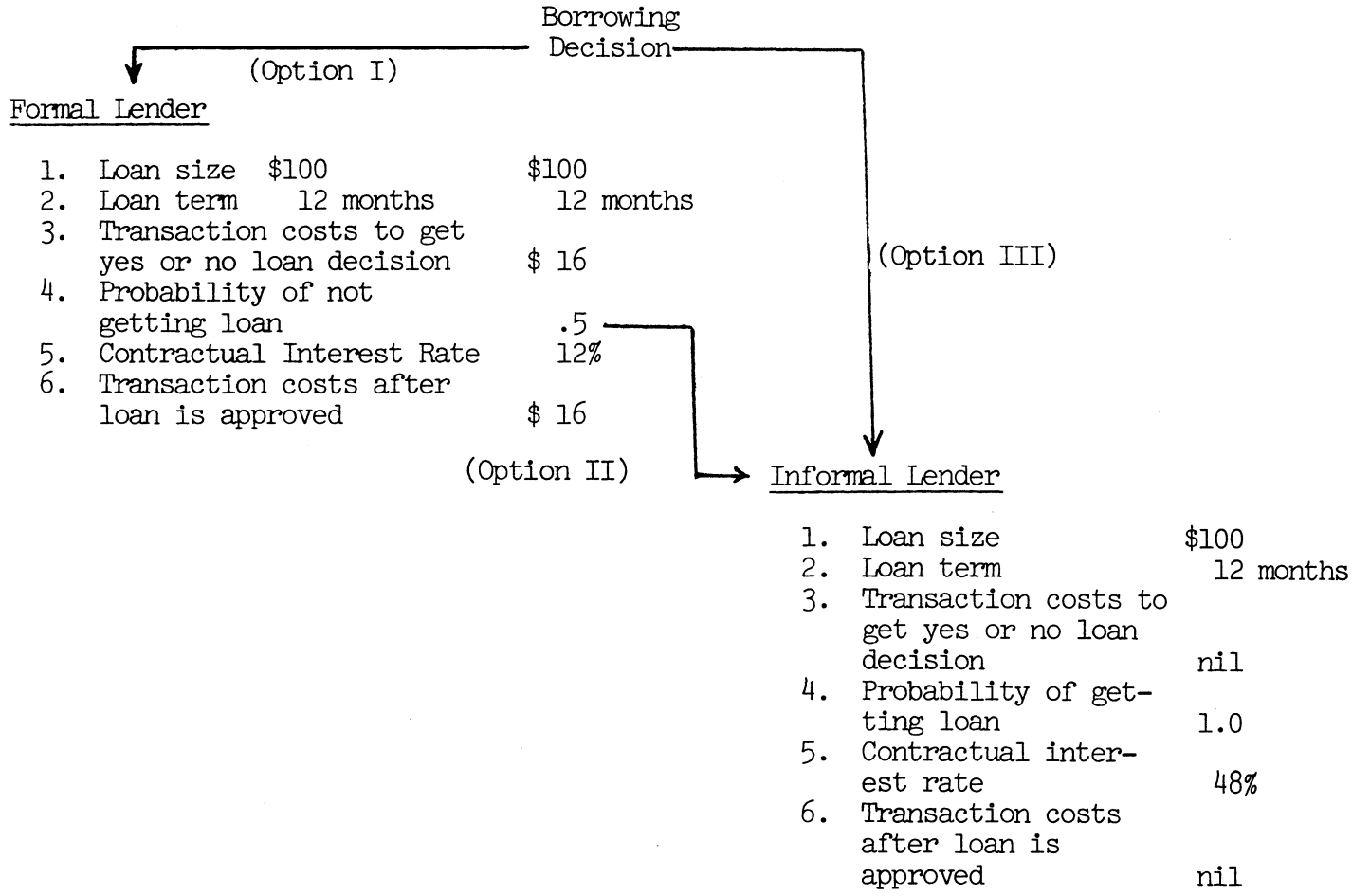
loan. New applicants also have a lower probability of getting their loans approved for the amount requested than do established borrowers. As a result of these factors, a new applicant for formal credit probably faces annualized costs of borrowing on his first formal loan which are substantially higher per unit of loan than is true for experienced borrowers. The new applicant also faces the prospects that he may incur substantial formal loan transaction costs, be denied all or part of his loan request, and be forced to turn to an informal lender for all or part of his credit requirements. This may be especially common in cases where concessional interest rates on formal credit induces credit demand which cannot be satisfied by formal lenders.

A simplified example of a hypothetical decision making process by a new, formal loan applicant is presented in Table 5. The various assumptions used in this example are approximately the same as the empirical results found in Nehman's Brazilian study.

We assume in Table 5 that a farmer who has never borrowed from a specific formal lender is interested in a 12-month loan for $100, and that he can be absolutely sure of getting the loan immediately and with no additional transaction costs from an informal lender who lives nearby (Option III). The informal lender insists on an interest rate, however, of 48 percent per year.

At the same time, the farmer has the opportunity of applying for an identical loan from a formal lender (Option I). The interest rate on the formal loan is only 12 percent per year, but because of excess demand for this concessionally priced credit, the probability of the farmer's loan application being approved is only .5. Furthermore, the farmer knows it will cost him $16 in various costs associated with preparing the loan application before he gets a yes or no decision on his loan. If the loan is approved, he also knows that

TABLE 5: Hypothetical Decision Making Paths of a New Formal Borrower



Effective Annual Costs of Borrowing

A.	Option I (16 + 12 + 16)	44%
B.	Option II (16 + 48)	64%
C.	Option III	48%
D.	Expected costs of Option #1 and Option #2 (44 + 64) · .5 =	54%

he must incur another $16 in loan transaction costs to fully negotiate and repay the loan. His annualized costs of borrowing from the formal lender, assuming his application is approved, is 44 percent per year.

The farmer recognizes, however, that he only has a one-out-of-two chance of getting the formal loan. He also recognizes that he may end up spending $16 to transact his formal loan application, have his application refused, and end up paying the informal lender $48 to borrow $100. The farmer's annualized costs of borrowing under Option II would be 64 percent. A priori, the farmer would have an expected price for credit via Options I and II of 54 percent [(44 + 64) X .5]. In this particular example, the farmer would have a lower expected cost of borrowing if he first selected the informal lender (Option III) rather than take his chances with the formal lender.

The example in Table 5 can be made more complex by changing some of the simplifying assumptions. In some cases, for example, the probability of obtaining an informal loan may be less than 1.0, and there may be certain transaction costs associated with informal loans. Also, in some cases, the probability of getting an informal loan may decrease if the borrower first applies to a formal lender.

The example can be further complicated by including changes in expected prices in the decision making process. Under some circumstances, expected changes in overall prices would have little or no effect on the relative desirability of formal and informal loans. This would be especially true if both types of loans were repaid in cash, and the real costs of borrowing for both types of loans were positive. If, however, informal borrowers repaid their loans in-kind while formal borrowers repaid in cash, the relative attractiveness of the two loan sources might be altered by expected price changes.

Under these circumstances, other things being equal, expected price increases would make formal loans more desirable than informal loans. Expected price decreases would make the informal loans more attractive.

Loan decisions also will be seriously affected in those cases where expectations are that price increase will be large enough to cause the real costs of formal loans to be negative, while the real borrowing costs of informal loans are positive. As indicated earlier, with these conditions the borrowers of formal credit may receive an income transfer through the loan transaction. Those borrowers who have a choice, will attempt to gain access to this income transfer.

The relative desirability of borrowing from formal and informal sources can be altered substantially by changing these various assumptions. To the extent that the assumptions in Table 5 are realistic, however, it appears that borrowers of small amounts in Brazil may be very rational in opting to use informal sources. Interest rates on formal loans may be much less important to borrowers of small amounts than are transaction costs, the dignity with which the lender treats the borrower, the probabilities of getting the loan, and assurances that additional credit is available if emergencies arise.

Interest Costs and Total Economic Activity

To this point we have presented data which suggest that interest costs may make up less than half the borrowing costs among rural borrowers of small amounts. As can be noted in Tables 6 and 7, it also appears that interest payments make up a relatively small proportion of the economic activities of small farmers in countries like Taiwan and Korea.

The farm-households in Taiwan, from which data in Table 6 are drawn, make heavy use of credit. In 1960, year-end credit balances amounted to .76 of total farm operating expenses, .36 of total farm-household cash expenses, and

TABLE 6: Ratios of Credit and Interest Payments to Expenses and Family Income Among Farm Record Keeping Households in Taiwan 1960, 1966 and 1972

Year	No. of Households	Total End of Year Credit Balance as a Percent of			Total Interest Payments as a Percent of		
		Operating Expenses	Total Cash Expenses	Net Farm Family Income	Operating Expenses	Total Cash Expenses	Net Farm Family Income
	-Number-	----------	----------	----------	Percent	----------	----------
1960	95	76	36	34	1.7	.8	.9
1966	430	74	31	36	1.7	.8	1.9
1972	452	58	24	38	1.9	.8	1.3

Source: Department of Agriculture and Forestry, Provincial Government of Taiwan, Farm Record Keeping Accounts 1960, 1966 and 1972.

.34 of net farm family income. In 1972 these ratios were .58, .24 and .38 respectively. Even though these farm-households made extensive use of credit, total interest payments were a very small part of their total economic activities. In 1960, interest payments amounted to only 1.7 percent of total farm operating expenses, 1.8 percent of total farm-household cash expenses, and only .9 percent of net farm family income. These percentages changed very little in 1966 and 1972.

The ratios in Table 7 indicate that Korean farmers were using relatively less credit than the Taiwanese farmers. In 1965, year-end credit balances amounted to 47 percent of farm operating expenses, 16 percent of total farm-household cash expenses, and less than 10 percent of net farm family income. All of these percentages dropped significantly by 1974. Partly because contractual interest rates on formal loans were higher in Korea than in Taiwan, interest payments amounted to a larger percentage of expenses and income in Korea. In 1965 interest charges amounted to seven percent of farm operating expenses, three percent of total farm-household cash expenses, and one percent of net farm family income. All three of these percentages decreased through 1974.

TABLE 7: Ratios of Credit and Interest Payments to Expenses and Family Income Among Farm Record Keeping Households in Korea 1965, 1968, 1971 and 1974

Year	No. of Households	Total End of Year Credit Balance as a Percent of			Total Interest Payments as a Percent of		
		Operating Expenses	Total Cash Expenses	Net Farm Family Income	Operating Expenses	Total Cash Expenses	Net Farm Family Income
	-Number-	-Percent-					
1965	1172	47	16	9	7	2.5	1.4
1968	1181	44	14	8	8	2.3	1.3
1971	1180	24	6	3	7	1.7	.8
1974	2515	27	8	4	6	1.8	.9

Source: Ministry of Agriculture and Fisheries, The Republic of Korea, Report on the Results of Farm-Household Economy Survey, various issues 1965-1975.

Policy Implications

As a result of the preceeding discussion, we conclude that contractual interest rates are likely to have a weak effect on the demand for formal credit by new borrowers and borrowers of small amounts. Expenditures on interest by borrowers of small amounts appear to make up only a small part of their total economic activity. More importantly, non-interest, loan transaction costs appear to constitute a large part of total borrowing costs for both groups of individuals. We conclude that policy makers should not stress low interest rates if they want to stimulate loan demand among the rural poor. Reducing borrower's loan transaction costs and increasing the probability that formal loan requests will be approved will be much more effective.

Some people have argued that low interest rates on agricultural credit are an easy way of "subidizing" the rural poor. Unfortunately, in most low income countries this "subidy" reaches only the well-to-do. As Gonzalez-Vega has pointed out, the low interest rates, often negative in real terms, force formal lenders to concentrate their concessionally priced loans in the hands of relatively few people. The implied income transfer associated with these negatively priced loans induce almost unlimited loan demand among the economically powerful. Formal lenders minimize their lending costs by making large loans to the well-to-do who have well defined collateral and established credit ratings. Formal lenders make only token loans to rural poor and can only be forced to lend more to this group through extremely heavy political pressure. Since the implied credit subidy is proportional to the amount borrowed, very little of the income transfer trickles down to the rural poor.

Because lending to borrowers of small amounts or new borrowers is less profitable than lending to the well-to-do under these conditions, formal lenders tend to errect administrative hurdles which increase loan transaction

costs for the rural poor. The rich are able to get additional loans through a simple costless telephone call. The poor face large lines, numerous visits to the formal lender, a good deal of paperwork, and in some cases the need to bribe decision makers before they have access to the "credit goodies." Higher, and more flexible interest rate policies would change this. The higher rates would cause large borrowers to reduce their use of formal agricultural loans, and to rely more heavily on their own capital. This would result in formal lenders having more loanable funds which could be directed to new borrowers and borrowers of small amounts. The higher interest rates would make it more profitable for formal lenders to actively seek this new business. In doing so, formal lenders would be forced to reduce and eliminate some of the loan acquisition hurdles which currently inflate the formal borrowing costs of many rural poor. The formal lender would be forced to adapt some of the borrowing convenience offered by informal lenders.

The net result of increasing interest rates on agricultural loans would be to reduce or eliminate the income transfer currently going to the well-to-do, make more credit available for the rural poor, bring formal lending into more direct competition with informal lenders, and possibly cause the total costs of borrowing by rural poor from formal sources to decline. That is, the loan transactions costs for rural poor to acquire formal loans may be reduced more than their interest charges on formal loans are increased.

Current interest rate policies in most LIC's neither allow the rural poor to use more formal credit nor help eliminate monopoly profits in informal credit markets. Rather, these policies direct the formal lenders activities away from providing financial services to low income people in rural areas. If policy makers want to increase the access of rural poor to financial services, these interest rate policies must be changed.

Footnotes

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